Listing of Claims:

1. (Original) A process to provide, retain and employ electronic charge injection to substantially change the properties of an article, the process comprising the steps of:

(a) providing an article A, wherein the article A is selected from the group consisting of a largely electrolyte-free porous electrode region, at least one particle, and combinations thereof;

(b) immersing article A into an electrolyte E;

(c) providing an ion conducting and substantially electronically insulating continuous path between article A and a counter-electrode B;

(d) applying a potential between article A and the counter electrode B for sufficient time that substantial electronic charge is predominately non-faradaically injected into article A to form a charge-injected article A; and

(e) substantially removing the electrolyte E from contact with charge-injected article A;

wherein both the article A and the counter electrode B have an electronically conducting state selected from the group consisting of charged, uncharged, and combinations thereof, and wherein the article A has an achievable capacitance for non-faradaic charging of at least about 0.1 F/g.

2. (Original) The process of claim 1, wherein step (d) further comprises the steps of:

(i) removing charge from article A by applying a series of potentials; and

(ii) re-injecting charge into article A, so as to thereby increase the gravimetric capacitance of article A.

3. (Original) The process of claim 2, wherein the steps of removing and re-injecting electronic charge into article A are carried out at least three times prior to performing step (e), so as to further enhance the gravimetric capacitance of article A.

4-23. (Canceled)

24. (Original) The process of claim 1, further comprising subsequent exposure of the article A to a material that can be adsorbed.

25. (Original) The process of claim 24, wherein said material comprises hydrogen.

26-31. (Canceled)

32. (Original) The process of claim 1, wherein step (e) further comprises a step of washing article A with an electronically insulating liquid L having a property selected from the group consisting of miscibility with the electrolyte E, a capability of dissolving ions of said electrolyte E, and combinations thereof.

33. (Original) The process of claim 32, wherein liquid L is substantially free of a salt.

34. (Original) The process of claim 32, wherein liquid L comprises a salt, and wherein ions of said salt act in a manner selected from the group consisting of substantially replacing ions associated with the charge injected state of article A, reacting with these ions to provide a new ion type, and combinations thereof.

35-38. (Canceled)

39. (Previously Presented) The process of claim 33, further comprising a step of drying article A that occurs after the step of washing article A with a liquid L, wherein volatile components of liquid L are substantially removed.

40. (Currently Amended) The process of claim 33, wherein a liquid L2 is subjected to an action selected from the group consisting of (1) maintained in intimate contact with article A at the end of said step of washing with a liquid L; (2) used to wash liquid L from article A; (3) placed in intimate contact with article A after the optional drying step, wherein volatilizable components of liquid L are substantially removed; and combinations thereof.

41. (Original) The process of claim 40, wherein said liquid L2 comprises a monomer that is capable of polymerization, and wherein liquid L2 is substantially polymerized while in intimate contact with article A.

42. (Original) The process of claim 40, wherein said liquid L2 is at least partially solid at room temperature and liquid above a higher temperature T_o, and wherein said liquid L2 is solidified while in intimate contact with article A.

43. (Currently Amended) The process of claim 40, wherein liquid L2 comprises a composition selected from the group consisting of substantially the same as liquid L, identical to liquid L, and combinations thereof.

44. (Canceled)

45. (Original) The process of claim 1, wherein article A comprises a material region with a thickness that is at most about one centimeter.

46. (Original) The process of claim 45, wherein the thickness of the material region is at most about 1000 microns.

47. (Original) The process of claim 46, wherein the thickness of the material region is at least about 10 microns.

48. (Original) The process of claim 1, wherein resistance compensation is used in step (d) to accelerate the rate at which charge is injected.

49-55. (Canceled)

56. (Original) The process of claim 1, wherein the article A has a gravimetric capacitance of at least 1 F/g.

57. (Original) The process of claim 56, wherein the article A has a gravimetric capacitance of at least 10 F/g.

58-61. (Canceled)

62. (Original) The process of claim 56, wherein the article A has a surface area of at least about 1 m^2/g.

63. (Original) The process of claim 62, wherein the article A has a surface area of at least about 10 m^2/g.

64-191. (Canceled)

192. (Original) The process of claim 1, wherein the article A is an aerogel.

193-195. (Canceled)

196. (Previously Presented) The process of claim 34, further comprising a step of drying article A that occurs after the step of washing article A with a liquid L, wherein volatile components of liquid L are substantially removed.

197. (Currently Amended) The process of claim 34, wherein a liquid L2 is subjected to an action selected from the group consisting of (1) maintained in intimate contact with article A at the end of said step of washing with a liquid L; (2) used to wash liquid L from article A; (3) placed in intimate contact with article A after the optional drying step, wherein volatilizable components of liquid L are substantially removed; and combinations thereof.

198. (Previously Presented) The process of claim 197, wherein said liquid L2 comprises a monomer that is capable of polymerization, and wherein liquid L2 is substantially polymerized while in intimate contact with article A.

199. (Previously Presented) The process of claim 197, wherein said liquid L2 is at least partially solid at room temperature and liquid above a higher temperature T_o, and wherein said liquid L2 is solidified while in intimate contact with article A.

200. (Currently Amended) The process of claim 197, wherein liquid L2 comprises a composition selected from the group consisting of substantially the same as liquid L, identical to liquid L, and combinations thereof.